PBW

Consulting Engineers and Scientists

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April 27, 2010
(PBW Project No. 1597B)

VIA HAND DELIVERY

Ms. Luda Voskov
Texas Commission on Environmental Quality
Building D
12100 Park 35 Circle
Austin, TX 78753

Re: Industrial Wastewater Permit Application Abbreviated Technical Report
Gulfco Marine Maintenance Superfund Site, Freeport, Texas

Dear Ms. Voskov:

Please find enclosed for your review, a completed Industrial Wastewater Permit Application Abbreviated Technical Report for discharge of accumulated water within an aboveground storage tank (AST) Tank Farm containment area at the above-referenced Site. Pastor, Behling & Wheeler, LLC (PBW) has prepared this report on behalf of LDL Coastal Limited LP (LDL), Chromalloy American Corporation (Chromalloy) and The Dow Chemical Company (Dow). The accumulated water is to be removed from the containment area as part of a Non-Time-Critical Removal Action at the AST Tank Farm. Discharge limits are requested from the Texas Commission on Environmental Quality (TCEQ) to assess whether the water can be discharged to the nearby Intracoastal Waterway.

As requested in a TCEQ memorandum previously provided by you, the report is being submitted in hard copy (enclosed with this letter) and as a Word file (transmitted earlier today via electronic mail). Based on discussions with Mr. Tres Koenings of your agency, we have not included the original laboratory reports for the analyses summarized in this report; however, we can readily provide that information if needed.

Thank you for the opportunity to submit this report. Since removal of the accumulated water is one of the first steps of the Removal Action, I would appreciate whatever you can do to facilitate an expedited review of this report. Should you have any questions, please do not hesitate to contact me.

Sincerely,

PASTOR, BEHLING & WHEELER, LLC

Eric F. Pastor, P.E.
Principal Engineer

cc: Mr. Gary Miller – US Environmental Protection Agency
Mr. Ray Merrell – Sequa Corporation
Mr. Brent Murray – Environmental Quality, Inc.
Mr. Donnie Belote - The Dow Chemical Company
Mr. Allen Daniels - LDL Coastal Limited, LP
Mr. F. William Mahley - Strasburger & Price, LLP
Mr. James C. Morriss III - Thompson & Knight, LLP
Ms. Elizabeth Webb - Thompson & Knight, LLP

INDUSTRIAL WASTEWATER APPLICATION
ABBREVIATED TECHNICAL REPORT

GULFCO MARINE MAINTENANCE SITE
FREEPORT, TEXAS

ABBREVIATED TECHNICAL REPORT 1.0 - INDUSTRIAL/STATE-LEAD SECTION

1. FACILITY/SITE INFORMATION (Instructions page 22)

a. Describe the type of activity and general nature of your business. (**SL NOTE** - describe what is known about the facility operations, if there is no historical information, write NA.) *The Gulfco Marine Maintenance Superfund Site is a former barge cleaning facility, which operated from approximately 1971 until 1998. The primary Site operations included draining, cleaning, servicing, and repair of barges. An aboveground storage tank (AST) Tank Farm, consisting of 14 tanks located within two concrete containment areas, is located in the southern part of the Site. This area was used for storage of product heels and wash waters associated with barge cleaning operations.*

b. Describe the wastewater generating process. (**SL NOTE** - describe what is known about the wastewater generating process, if there is no historical information, write NA.) *As part of a Non-Time-Critical Removal Action, the contents of the tanks in the AST Tank Farm will be removed and the tanks demolished. To facilitate tank content removal, accumulated water contained within the containment area will be removed. This accumulated water is the wastewater for which discharge limits are being sought.*

f. Is this a new permit application for an existing facility? ■ **Yes** ☐ **No**

If yes, provide background discussion below. (**SL NOTE** - the facility may have had a permit during it's operating history. This information should be included in the HRS. Also, check Central Registry as the Registry may contain information regarding historical permits for the facility.) *As described in the HRS Documentation Record for the Site (TNRCC, 2002), barge cleaning process wastewaters were managed in on-site surface water impoundments and/or transported off-site. The HRS documentation does not indicate that the facility ever had a wastewater discharge permit during its operating history.*

2. TREATMENT SYSTEM

a. List any physical, chemical and/or biological treatment process that you use for the treatment of wastewater at your facility. Include a description of each process starting with initial treatment and finishing with the discharge point. (**SL NOTE** - this information generally will not be available until the remedial design phase. It will be advantageous to request discharge limits with WPS prior to the remedial design phase.) *No treatment processes will be used.*

3. IMPOUNDMENTS – *NA*

Discharge Point: If a discharge occurs from the impoundments, designate the outfall associated with the impoundment. (**SL NOTE** - unless the facility had a wastewater discharge permit in the past, there are no designated outfalls. Therefore, indicate the latitude/longitude for the anticipated outfall location.)

Indicate by a check mark that the following information was provided:

☐ A USGS quadrangle map or color copy of original quality and scale which accurately locates and identifies water supply wells and/or monitor wells within ½ mile radius of the impoundments. (**SL NOTE** - the USGS quadrangle map[s] must clearly delineate the discharge route three miles downstream from the point of discharge.)

☐ Copies of State Water Well Reports (driller's logs, completion data), and data on depths to ground water for water supply wells including a description of how the depths to ground water were obtained.

For Texas Land Application Permits (TLAP) permit applications: ☐ Indicate by a check mark that the new or proposed impoundment(s) and the land application disposal area are located in the same general area and the information for this item is provided in Worksheet 3.0 (item 8). (**SL NOTE** - SL will generally **not** use a TLAP disposal method, but if one of these methods is contemplated in the remedial design, this information should be included.)

4. OUTFALL/DISPOSAL METHOD INFORMATION (Instructions, page 25)

Complete the following tables to describe the location and wastewater discharge or disposal operations for each outfall for discharge operations and for each point of disposal for TLAP operations. (**SL NOTE** - If it is possible to vary the discharge rate for a Superfund action, then include a separate table for each proposed discharge rate you want evaluated. Please **CLEARLY** indicate that you are requesting the WPS to evaluate multiple discharge rates, not multiple outfalls.)

For TLAP permit applications: Indicate the disposal method and each individual **irrigation** area **(I), evaporation pond (E),** or **subsurface drainage system (S)** by providing the appropriate letter designation for the disposal method followed by a numerical designation for each disposal area (e.g. evaporation pond, application area) in the space provided for "Outfall" designation (e.g. "E1" for evaporation pond 1, "I2" for irrigation area No. 2, etc.). (**SL NOTE** - SL will generally **not** use a TLAP [Texas Land Application Permit] disposal method, but if one of these methods is contemplated in the remedial design, this information should be included.)

OUTFALL: *1*

Latitude		Longitude		Location Description	
28° 57' 58.01"		*95° 17' 15.32"*		*Intracoastal Waterway approximately ¾ mile northeast of Hwy 332 bridge.*	
Permitted Flow (MGD)		Proposed Flow (MGD)			
Dly Avg	Dly Max	Dly Avg	Dly Max	Discharge Duration	
				____ (hrs./day) ____ (day/mo.) ____ (mo./year)	
_x_ Pumped ___ Gravity		Measurement Device____		____ Intermittent ____ Seasonal ____ Continuous	
Contributing Wastestreams:				Volume (MGD)	% of Total Flow
Wastestream is accumulated water within AST Tank Farm containment area. One-time discharge of this water is anticipated, although supplemental discharges may be required depending on rainfall during implementation of tank removal action. Discharge volume is dependent on rainfall conditions prior to removal action implementation. Anticipated discharge is approximately 120,000 gallons, but may range from 0 gallons to approximately 240,000 gallons. Water will be removed from containment area via one or more pumps and discharged directly to the Intracoastal Waterway.					

6. STORM WATER MANAGEMENT (Instructions, page 26)

Are there any existing or proposed outfalls which discharge storm water runoff commingled with other wastestreams?
■ Yes ☐ No. If **yes,** provide the following information. If **no,** proceed to Item No. 7.

a. Provide a brief narrative description of the industrial processes and activities that occur outdoors or in some manner that may result in exposure of the materials to precipitation or runoff in areas where runoff is generated. *Water to be discharged is accumulated water from within AST Tank Farm containment area.*

11. RADIOACTIVE MATERIALS (Instructions, page 28)

Are radioactive materials mined, used, stored, or processed at this facility?
☐ Yes ■ No

If **yes,** Provide a list of the materials and the results of one analysis of your effluent in picocuries per liter (pCi/L) for all radioactive parameters which may be present.

Radioactive Materials	Conc. (pCi/L)

WORKSHEETS
TO THE INDUSTRIAL WASTEWATER PERMIT APPLICATION TECHNICAL REPORT

Please review the worksheet requirements in the instructions and indicate by checking either yes or no which worksheets are required, completed, and submitted with the technical report. Worksheets that are not applicable do not need to be submitted with the technical report. **(SL NOTE** - Only Worksheet Nos 2.0 and 4.0 are necessary for SL requests.)

WORKSHEET	COMPLETED AND SUBMITTED WITH THE TECHNICAL REPORT:	
	YES	NO
1.0: EPA EFFLUENT CATEGORICAL GUIDELINES	N/A	N/A
2.0: POLLUTANT ANALYSES REQUIREMENTS	*X*	
3.0: LAND DISPOSAL OF EFFLUENT	N/A	N/A
4.0: RECEIVING WATERS	*X*	
4.1: STREAM PHYSICAL CHARACTERISTICS WORKSHEET	N/A	N/A
5.0: SEWAGE SLUDGE MANAGEMENT AND DISPOSAL	N/A	N/A
6.0: INDUSTRIAL WASTE CONTRIBUTION	N/A	N/A
7.0: STORM WATER RUNOFF	N/A	N/A
8.0: AQUACULTURE	N/A	N/A
9.0: CLASS V INJECTION WELL	N/A	N/A

WORKSHEET 2.0 - POLLUTANT ANALYSES REQUIREMENTS

REQUIRED FOR APPLICATIONS SUBMITTED FOR A TPDES PERMIT. NOT REQUIRED FOR APPLICATIONS FOR A PERMIT TO DISPOSE OF ALL WASTEWATER BY LAND DISPOSAL OR FOR DISCHARGES SOLELY OF STORM WATER RUNOFF. (General Requirements: Instructions, Page 33)

1. **TABLE 1:** Complete table required for all external outfalls. (Instructions, Page 34) – ***See attached comprehensive table of all containment area sample analytical results (Attachment A).***

Outfall No.: ☐C ■G	Effluent Concentration (mg/L)					
Pollutants	**Samp. 1**	**Samp. 2**	**Samp. 3**	**Samp. 4**	**Average**	
BOD (5-day)						
CBOD (5-day)						
Chemical Oxygen Demand						
Total Organic Carbon						
Dissolved Oxygen						
Ammonia Nitrogen						
Total Suspended Solids						
Nitrate Nitrogen						
Total Organic Nitrogen						
Total Phosphorus						
Oil and Grease						
Total Residual Chlorine						
Total Dissolved Solids						
Sulfate						
Chloride						
Fluoride						
Fecal Coliform						
Temperature (_F)						
pH (Standard Units; min/max)						
Effluent Concentration (µg/L)						**MAL(µg/L)**
Total Aluminum						30
Total Antimony						60
Total Arsenic						10
Total Barium						10
Total Beryllium						5
Total Cadmium						1
Total Chromium						10
Trivalent Chromium						N/A
Hexavalent Chromium						10
Total Copper						10
Cyanide						20
Total Lead						5
Total Mercury						0.2
Total Nickel						10
Total Selenium						10
Total Silver						2.0
Total Thallium						10
Total Zinc						5

2. **TABLE 2:** Complete table required for all external outfalls which discharge process wastewater. Partial table required for all external outfalls with nonprocess wastewater discharges. Storm water runoff discharges commingled with other wastestreams shall complete the table as instructed (Instructions, Page 34). (**SL NOTE** - MAL is the same as LORP) ***NA – no process wastewater discharge.***

Outfall No.: ☐C ☐G	**Effluent Concentration (µg/L) (*1)**					
Pollutants	**Samp. 1**	**Samp. 2**	**Samp. 3**	**Samp. 4**	**Average**	**MAL (µg/L)**
Benzene						10
Benzidine						50
Benzo(a)anthracene						10
Benzo(a)pyrene						10
Carbon Tetrachloride						10
Chlorobenzene						10
Chloroform						10
Chrysene						10
Cresols						(*2)
Dibromochloromethane						10
1,2-Dibromoethane						2
1,4-Dichlorobenzene						10
1,2-Dichloroethane						10
1,1-Dichloroethylene						10
Fluoride						500
Hexachlorobenzene						10
Hexachlorobutadiene						10
Hexachloroethane						20
Methyl Ethyl Ketone						50
Nitrobenzene						10
n-Nitrosodiethylamine						20
n-Nitroso-di-n-Butylamine						20
PCB's, Total (*3)						1
Pentachlorobenzene						20
Pentachlorophenol						50
Phenanthrene						10
Pyridine						20
1,2,4,5-Tetrachlorobenzene						20
Tetrachloroethylene						10
Trichloroethylene						10
1,1,1-Trichloroethane						10
2,4,5-Trichlorophenol						50
TTHM (Total Trihalomethanes)						10
Vinyl Chloride						10

(*1) Indicate units if different from µg/L.
(*2) MAL's for Cresols: p-Chloro-m-Cresol 10 µg/L; 4,6-Dinitro-o-Cresol 50 µg/L; p-Cresol 10 µ:g/L
(*3) Total of PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, PCB-1016.

3. **TABLE 3:** Partial table (only those pollutants which are required by the conditions specified) required for each external outfall. Not required for internal outfalls. (Instructions, Page 34)

a. TRIBUTYLTIN:

Is your facility or will your proposed facility be an industrial/commercial facilities which directly disposes of wastewater from the types of operations listed below or a domestic facilities which receive wastewater from the types of industrial/commercial operations listed below? ☐ Yes ■ No ***No process wastewater discharge proposed.***

If **yes**, indicate with a check mark all of the following criteria which apply and provide the appropriate testing results in the table below.

☐ Manufacturers and formulators of tributyltin or related compounds.
☐ Painting of ships, boats and marine structures.
☐ Ship and boat building and repairing.
☐ Ship and boat cleaning, salvage, wrecking and scaling.
☐ Operation and maintenance of marine cargo handling facilities and marinas
☐ Facilities engaged in wood preserving
☐ Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. ENTEROCOCCI

Does your facility or will your proposed facility discharge directly into saltwater receiving waters?
■ Yes ☐ No

If **yes**, provide the appropriate testing results in the table below. ***Discharge is accumulated water within AST tank farm containment area – Enterococci testing not performed.***

TABLE 3

Outfall No.:	☐C ☐G	**Effluent Concentration (µg/L) (*1)**					
Pollutants		**Samp. 1**	**Samp. 2**	**Samp. 3**	**Samp. 4**	**Average**	**MAL (µg/L)**
Tributyltin							0.010
Enterococci							N/A

4. **TABLE 4:** Complete table required for all external outfalls which discharge process wastewater and other wastewaters, which may contain pesticides or herbicides, from a facility which manufactures or formulates pesticides or herbicides. Not required for internal outfalls. (Instructions, Page 35)

Does your facility manufacture or formulate pesticides or herbicides? ☐ Yes ■ No
If **yes**, provide the appropriate testing results.

TABLE 4

Outfall No.: ☐C ☐G	**Effluent Concentration (µg/L) (*1)**					
Pollutants	**Samp. 1**	**Samp. 2**	**Samp. 3**	**Samp. 4**	**Average**	**MAL (µg/L)**
Beta-hexachlorocyclohexane						0.05
Carbaryl						5
Chlordane						0.15
Chlorpyrifos						0.05
2,4-D						10
Danitol						----
4,4'-DDD						0.1
4,4'-DDE						0.1
4,4'-DDT						0.1
Demeton						0.2
Diazinon						0.5
Dicofol						20
Dieldrin						0.1
Diuron						----
Endosulfan I (alpha)						0.1
Endosulfan II (beta)						0.1
Endosulfan Sulfate						0.1
Endrin						0.1
Gamma - Hexachlorocyclohexane (Lindane)						0.05
Guthion						0.10
Heptachlor						0.05
Heptachlor Epoxide						1.0
Hexachlorophene						10
Malathion						0.10
Methoxychlor						2.0
Mirex						0.2
Parathion						0.1
Toxaphene						5
2,4,5-TP (Silvex)						2

* Indicate units if different from µg/L.

5. **TABLE 5:** Complete table required for all external outfalls. Not required for internal outfalls. (Instructions, Page 35) ***See attached comprehensive table of all analytical results.***

TABLE 5

Outfall No.:	☐C ■ G	**Believed Present**	**Believed Absent**	**Effluent Concentration (mg/L)**		
Pollutants				**Average**	**Maximum**	**No. of Samples**
Bromide						
Color(PCU)						
Nitrate-Nitrite(as N)						
Sulfide(as S)						
Sulfite(as SO3)						
Surfactants						
Total Antimony						
Total Beryllium						
Total Boron						
Total Cobalt						
Total Iron						
Total Magnesium						
Total Molybdenum						
Total Manganese						
Total Thallium						
Total Tin						
Total Titanium						

6. **TABLE 6:** Indicate with a check mark any of the industrial categories applicable to your facility. If testing is required, indicate with a check mark in the box provided that the testing results for the appropriate parameters in Table B-7 are provided with the application. (Instructions, Page 35)

■ N/A *Facility is inactive*

	GC/MS Testing Required			
	Volatile	**Acid**	**Base/Neutral**	**Pesticides**
Adhesives and Sealants	Yes ☐	Yes ☐	Yes ☐	No
Aluminum Forming	Yes ☐	Yes ☐	Yes ☐	No
Auto and Other Laundries	Yes ☐	Yes ☐	Yes ☐	Yes ☐
Battery Manufacturing	Yes ☐	No	Yes ☐	No
Coal Mining	No	No	No	No
Coil Coating	Yes ☐	Yes ☐	Yes ☐	No
Copper Forming	Yes ☐	Yes ☐	Yes ☐	No
Electric and Electronic Components	Yes ☐	Yes ☐	Yes ☐	Yes ☐
Electroplating	Yes ☐	Yes ☐	Yes ☐	No
Explosives Manufacturing	No	Yes ☐	Yes ☐	No
Foundries	Yes ☐	Yes ☐	Yes ☐	No
Gum and Wood Chemicals				
Subparts A,B,C,E	Yes ☐	Yes ☐	No	No
Subparts D,F	Yes ☐	Yes ☐	Yes ☐	No
Inorganic Chemicals	Yes ☐	Yes ☐	Yes ☐	No
Iron and Steel Manufacturing	Yes ☐	Yes ☐	Yes ☐	No
Leather Tanning/Finishing	Yes ☐	Yes ☐	Yes ☐	No
Mechanical Products Manufacturing	Yes ☐	Yes ☐	Yes ☐	No
Nonferrous Metals Mfg.	Yes ☐	Yes ☐	Yes ☐	Yes ☐
Ore Mining(Subpart B)	No	Yes ☐	No	No
Organic Chemicals, Plastics, and Synthetic Fibers	Yes ☐	Yes ☐	Yes ☐	Yes ☐
Paint and Ink Formulation	Yes ☐	Yes ☐	Yes ☐	No
Pesticides	Yes ☐	Yes ☐	Yes ☐	Yes ☐
Petroleum Refining	Yes ☐	No	No	No
Pharmaceutical Preparations	Yes ☐	Yes ☐	Yes ☐	No
Photographic Equipment and Supplies	Yes ☐	Yes ☐	Yes ☐	No
Plastic and Synthetic Materials Manufacturing	Yes ☐	Yes ☐	Yes ☐	Yes ☐
Plastic Processing	Yes ☐	No	No	No
Porcelain Enameling	No	No	No	No
Printing and Publishing	Yes ☐	Yes ☐	Yes ☐	Yes ☐
Pulp and Paperboard Mills				
Subparts A *	* ☐	Yes ☐	* ☐	Yes ☐
Subparts B,C,D,R	* ☐	Yes ☐	* ☐	* ☐
Subparts F,G,H,I,K,L,M,N,O,P	Yes ☐	Yes ☐	* ☐	* ☐
Subparts E,Q,S,T	Yes ☐	Yes ☐	* ☐	Yes ☐
Subparts J,U	Yes ☐	Yes ☐	Yes ☐	* ☐
Rubber Processing	Yes ☐	Yes ☐	Yes ☐	No
Soap and Detergent Manufacturing	Yes ☐	Yes ☐	Yes ☐	No
Steam Electric Power Plants	Yes ☐	Yes ☐	No	No
Textile Mills (Not Subpart C)	Yes ☐	Yes ☐	Yes ☐	No
Timber Products Processing	Yes ☐	Yes ☐	Yes ☐	Yes ☐

* Test if "believed present"

7. **TABLE 7:** Please complete as directed and only for those parameters specified in Table 6. Required for all external outfalls which contain process wastewater. Not required for internal outfalls. Testing may be required for types of industry not specified in Table 6 for specific parameters if believed present (Instructions, Page 36). ***See attached comprehensive table of all analytical results.***

TABLE 7

Outfall No.: ☐C ☐G	**Effluent Concentration (µg/L) ***			
Pollutants	**Average**	**Maximum**	**No. of Samples**	**MAL (µg/L)**
VOLATILE COMPOUNDS				
Acrolein				50
Acrylonitrile				50
Benzene				10
Bromoform				10
Carbon Tetrachloride				10
Chlorobenzene				10
Chlorodibromomethane				10
Chloroethane				50
2-Chloroethylvinyl Ether				10
Chloroform				10
Dichlorobromomethane				10
1,1-Dichloroethane				10
1,2,-Dichloroethane				10
1,1-Dichloroethylene				10
1,2-Dichloropropane				10
1,3-Dichloropropylene				10
Ethylbenzene				10
Methyl Bromide				50
Methyl Chloride				50
Methylene Chloride				20
1,1,2,2-Tetrachloroethane				10
Tetrachloroethylene				10
Toluene				10
1,2-Trans-Dichloroethylene				10
1,1,1-Trichloroethane				10
1,1,2-Trichloroethane				10
Trichloroethylene				10
Vinyl Chloride				10

	Effluent Concentration (µg/L) *			
Pollutants	**Average**	**Maximum**	**No. of Samples**	**MAL (µg/L)**
ACID COMPOUNDS				
2-Chlorophenol				10
2,4-Dichlorophenol				10
2,4-Dimethylphenol				10
4,6-Dinitro-o-Cresol				50
2,4-Dinitrophenol				50
2-Nitrophenol				20
4-Nitrophenol				50
P-Chloro-m-Cresol				10
Pentachlorophenol				50
Phenol				10
2,4,6-Trichlorophenol				10
BASE/NEUTRAL COMPOUNDS				
Acenaphthene				10
Acenaphthylene				10
Anthracene				10
Benzidine				50
Benzo(a)Anthracene				10
Benzo(a)Pyrene				10
3,4-Benzofluoranthene				10
Benzo(ghi)Perylene				20
Benzo(k)Fluoranthene				10
Bis(2-Chloroethoxy)Methane				10
Bis(2-Chloroethyl)Ether				10
Bis(2-Chloroisopropyl)Ether				10
Bis(2-Ethylhexyl)Phthalate				10
4-Bromophenyl Phenyl Ether				10
Butylbenzyl Phthalate				10
2-chloronaphthalene				10
4-chlorophenyl phenyl ether				10
Chrysene				10
Dibenzo(a,h)Anthracene				20
1,2-Dichlorobenzene				10
1,3-Dichlorobenzene				10
1,4-Dichlorobenzene				10
3,3-Dichlorobenzidine				50
Diethyl Phthalate				10
Dimethyl Phthalate				10
Di-n-Butyl Phthalate				10
2,4-Dinitrotoluene				10

	Effluent Concentration (µg/L) *			
Pollutants	**Average**	**Maximum**	**No. of Samples**	**MAL (µg/L)**
BASE/NEUTRAL COMPOUNDS (cont.)				
2,6-Dinitrotoluene				10
Di-n-Octyl Phthalate				10
1,2-Diphenyl Hydrazine (as Azobenzene)				20
Fluoranthene				10
Fluorene				10
Hexachlorobenzene				10
Hexachlorobutadiene				10
Hexachlorocyclopentadiene				10
Hexachloroethane				20
Indeno(1,2,3-cd)pyrene				20
Isophorone				10
Naphthalene				10
Nitrobenzene				10
N-Nitrosodimethylamine				50
N-Nitrosodi-n-Propylamine				20
N-Nitrosodiphenylamine				20
Phenanthrene				10
Pyrene				10
1,2,4-Trichlorobenzene				10
PESTICIDES				
Aldrin				0.05
alpha-BHC				0.05
beta-BHC				0.05
gamma-BHC				0.05
delta-BHC				0.05
Chlordane				0.15
4,4,-DDT				0.1
4,4,-DDE				0.1
4,4,-DDE				0.1
Dieldrin				0.1
alpha-Endosulfan				0.1
beta-Endosulfan				0.1
Endosulfan Sulfate				0.1
Endrin				0.1
Endrin Aldehyde				0.1
Heptachlor				0.05

	Effluent Concentration (µg/L) *			
Pollutants	**Average**	**Maximum**	**No. of Samples**	**MAL (µg/L)**
PESTICIDES (cont)				
Heptachlor Epoxide				
PCB-1254				1.0
PCB-1221				1.0
PCB-1242				
PCB-1232				1.0
PCB-1248				1.0
PCB-1260				1.0
PCB-1016				1.0
Toxaphene				0.5

* Indicate units if different from µg/L

8. **TABLE 8 (DIOXINS/FURAN COMPOUNDS)**: Please complete as directed. Not required for internal outfalls. (Instructions, Page 36)

a. Are any of the following compounds manufactured and/or used in a process at the facility? ☐ Yes ■ No

If **yes**, indicate with a check mark the compound(s) which apply and provide a brief description of the conditions of its/their presence at the facility.

☐ 2,4,5-trichlorophenoxy acetic acid (2,4,5-T) CAS #93-76-5
☐ 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP) CAS #93-72-1
☐ 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon) CAS #136-25-4
☐ 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel) CAS #299-84-3
☐ 2,4,5-trichlorophenol (TCP) CAS #95-95-4
☐ Hexachlorophene (HCP) CAS #70-30-4

b. Do you know or have any reason to believe that 2,3,7,8 Tetrachlorodibenzo-P-Dioxin (TCDD) or any congeners of TCDD may be present in your effluent? ☐ Yes ■ No

If **yes,** provide a brief description of the conditions for its presence.

c. If your responded **yes** to either item **a** or **b**, complete **Table 8** as instructed.

TABLE 8

Outfall ____	☐C ☐G	Wastewater		Sludge		
Compound	**Equivalent Factors**	**Concentration (ppq)**	**Equivalents (ppq)**	**Concentration (ppt)**	**Equivalents (ppt)**	**MAL (ppq)**
2,3,7,8-TCDD	1					10.0
1,2,3,7,8-PeCDD	0.5					50.0
2,3,7,8-HxCDDs	0.1					50.0
2,3,7,8-TCDF	0.1					10.0
1,2,3,7,8-PeCDF	0.05					50.0
2,3,4,7,8-PeCDF	0.5					50.0
2,3,7,8-HxCDFs	0.1					50.0
Total						

9. **TABLE 9 (HAZARDOUS SUBSTANCES):** Proceed complete as directed. Not required for internal outfalls. (Instructions, Page 37)

a. Are there any pollutants listed in the instructions (page 37) believed present in the discharge?
■ Yes ☐ No

b. Are there pollutants listed in Item No. 1.d. on Page No. 1 of this technical report which are believed present in the discharge and have not been analytically quantified elsewhere in this application? ☐ Yes ■ No

If your responded **yes** to either item, complete **Table 9** as instructed.
See attached comprehensive table of all analytical results.

TABLE 9

Pollutant & CAS Number	Average (µg/L)	Maximum (µg/L)	No. of Samples	Analytical Method

WORKSHEET 4.0 - RECEIVING WATERS
THE FOLLOWING IS REQUIRED FOR ALL TPDES PERMIT APPLICATIONS

1. DOMESTIC DRINKING WATER SUPPLY (Instructions, Page 46)

Is there a surface water intake for domestic drinking water supply located within 5 (five) miles downstream from the point/proposed point of discharge? ☐ Yes ■ No

If **yes**, identify owner of the drinking water supply, the distance and direction to the intake, and locate and identify the intake on the USGS map. Indicate by a check mark that the requested information is provided: ☐

2. DISCHARGE INTO TIDALLY INFLUENCED WATERS (Instructions, Page 46)

a. Width of the receiving water at the outfall? *500* feet

b. Are there oyster reefs in the vicinity of the discharge? ☐ Yes ■ No

If **yes**, indicate approximate distance and direction from outfall(s): *NA*

c. Are there any sea grasses within the vicinity of the point of discharge? ☐ Yes ■ No

If **yes**, provide the distance and direction to the grasses: *NA*

3. CLASSIFIED SEGMENT (Instructions, Page 46)

Is the discharge directly into (or within 300 feet of) a classified segment? ■ Yes ☐ No

If **yes**, stop here. It is not necessary to complete items 4 and 5 and it is not necessary to complete Worksheet 4.1. If no, complete items 4 and 5.

4. DESCRIPTION OF IMMEDIATE RECEIVING WATERS (Instructions, Pages 46)

Name of the immediate receiving waters: _____

a. Check the appropriate description of the receiving waters

☐ Man-made Channel or Ditch
☐ Stream or creek
☐ Lake or Pond
  Surface area _____ acres. Average depth of the entire water body _____ feet
  Average depth of water body within a 500-foot radius or the discharge point _____ feet
☐ Freshwater Swamp or Marsh
☐ Tidal Stream, Bayou, or Marsh
☐ Open Bay
☐ Other: _____

If a man-made channel, ditch or stream was checked above, provide the following:

b. Check one of the following that best characterizes the area upstream of the discharge. For new discharges, characterize the area downstream of the discharge (check one).

☐ Intermittent (dry for at least one week during most years)
☐ Intermittent with Perennial Pools (enduring pools containing sufficient habitat to maintain significant aquatic life uses)
☐ Perennial (normally flowing)

Check the method used to characterize the area upstream (or downstream for new dischargers): ☐ USGS flow records, ☐ personal observation, ☐ historical observation by adjacent landowner(s), ☐ others, specify:

---

c. List the name(s) of all perennial streams that join the receiving water *within three miles downstream of the discharge* point:

---

d. Do the receiving water characteristics change within three miles downstream of the discharge? (e.g., natural or man-made dams, ponds, reservoirs, etc.) ☐ Yes ☐ No

If yes, discuss how:

e. Provide general observations of the water body during normal dry weather conditions:

Date and time of observation:_____

Was water body influenced by storm water runoff during observations? ☐ Yes ☐ No

5. GENERAL CHARACTERISTICS OF WATER BODY (Instructions, Page 47)

a. Is the receiving water upstream of the discharges or proposed discharge site influenced by (check as appropriate):

☐	oil field activities	☐	urban runoff
☐	agricultural runoff	☐	septic tanks
☐	upstream discharges	☐	others, specify below

b. Uses of water body, observed or evidences of (check as appropriate):

☐	livestock watering	☐	contact recreation	☐	irrigation withdrawal
☐	non contact recreation	☐	fishing	☐	navigation
☐	domestic water supply	☐	industrial water supply	☐	picnic park activities
☐	others, specify below				

c. Check one of the following to best describe the aesthetics of the receiving water and the surrounding area:

☐ Wilderness: outstanding natural beauty; usually wooded or unpastured area: water clarity exceptional

☐ Natural Area: trees and/or native vegetation common; some development evident (from fields, pastures, dwellings); water clarity; discolored

☐ Common Setting: not offensive, developed but uncluttered; water may be colored or turbid

☐ Offensive: stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

ATTACHMENT A

GULFCO FORMER AST TANK FARM
NORTH AND SOUTH CONTAINMENT AREA SAMPLE ANALYTICAL RESULTS

Gulfco Former AST Tank Farm
North and South Containment Area Sample Analytical Results

Parameter	North Containment		South Containment	
	12/14/2006	4/6/2010	12/14/2006	4/6/2010
VOCs				
1,1,1,2-Tetrachloroethane	<0.000965	<0.000113	<0.000482	<0.000113
1,1,1-Trichloroethane	0.031	<0.000106	<0.000461	<0.000106
1,1,2,2-Tetrachloroethane	<0.00024	<0.000073	<0.00012	<0.000073
1,1,2-Trichloroethane	<0.000665	<0.000095	<0.000333	<0.000095
1,1-Dichloroethane	0.00244 J	<0.000031	<0.000237	<0.000031
1,1-Dichloroethene	<0.000411	<0.000164	<0.000205	<0.000164
1,1-Dichloropropene	<0.00058	<0.000067	<0.00029	<0.000067
1,2,3-Trichloropropane	<0.00145	<0.0001	<0.000726	<0.0001
1,2,4-Trichlorobenzene	<0.000422	<0.000119	<0.000211	<0.000119
1,2,4-Trimethylbenzene	0.0037 J	<0.000027	0.00939	<0.000027
1,2-Dibromo-3-chloropropane	<0.00038	<0.000082	<0.00019	<0.000082
1,2-Dibromoethane	<0.000539	<0.000047	<0.000269	<0.000047
1,2-Dichlorobenzene	<0.000801	<0.000079	<0.000401	<0.000079
1,2-Dichloroethane	0.045	0.0101	0.00304 J	<0.000086
1,2-Dichloropropane	<0.000507	<0.000064	<0.000254	<0.000064
1,3,5-Trimethylbenzene	<0.000422	<0.000021	0.00235 J	<0.000021
1,3-Dichlorobenzene	<0.00063	<0.000099	<0.000315	<0.000099
1,3-Dichloropropane	<0.000511	<0.000042	<0.000255	<0.000042
1,4-Dichlorobenzene	<0.00108	<0.000118	<0.000538	<0.000118
2,2-Dichloropropane	<0.000532	<0.000117	<0.000266	<0.000117
2-Butanone	<0.00217	<0.000093	<0.00109	<0.000093
2-Chloroethylvinyl ether	<0.00109	<0.000515 J	<0.000547	<0.000515 J
2-Chlorotoluene	<0.000603	<0.000045	<0.000301	<0.000045
2-Hexanone	<0.000823	<0.000503	<0.000412	<0.000503
4-Chlorotoluene	<0.000661	<0.000052	<0.000331	<0.000052
4-Isopropyltoluene	<0.000242	<0.000037	<0.000121	<0.000037
4-Methyl-2-pentanone	<0.0000996	<0.000065	<0.0000498	<0.000065
Acetone	<0.00382	0.0084 J	0.021 J	<0.00115
Acrolein	<0.00403	<0.00169	<0.00201	<0.00169
Acrylonitrile	<0.00646	<0.00103	<0.00323	<0.00103
Benzene	0.011	0.000637 J	0.015	<0.000054
Bromobenzene	<0.000641	<0.000084	<0.000321	<0.000084
Bromodichloromethane	<0.000289	<0.000053	<0.000145	<0.000053
Bromoform	<0.000755	<0.000104	<0.000377	<0.000104
Bromomethane	<0.00155	<0.000264	<0.000774	<0.000264
Carbon disulfide	<0.000487	<0.000143	<0.000244	<0.000143
Carbon tetrachloride	0.00889 J	<0.000148	<0.000336	<0.000148
Chlorobenzene	<0.000324	<0.000027	<0.000162	<0.000027
Chloroethane	<0.00115	<0.000351	<0.000574	<0.000351
Chloroform	0.095	0.0247	0.03	<0.000057
Chloromethane	<0.00129	<0.000089	<0.000645	<0.000089
cis-1,2-Dichloroethene	0.00513 J	<0.000061	<0.000292	<0.000061
cis-1,3-Dichloropropene	<0.00033	<0.000031	<0.000165	<0.000031
Cyclohexane	0.00293 J	<0.000064	0.000936 J	<0.000064
Dibromochloromethane	<0.000455	<0.000041	<0.000228	<0.000041
Dibromomethane	<0.000756	<0.000184	<0.000378	<0.000184
Dichlorodifluoromethane	<0.000677	<0.000096	<0.000339	<0.000096
Ethylbenzene	0.011	<0.000063	0.00135 J	<0.000063
Hexachlorobutadiene	<0.0009	<0.00069	<0.00045	<0.00069
Isopropylbenzene (Cumene)	0.00453 J	<0.000035	0.000515 J	<0.000035
m,p-Xylene	0.00292 J	<0.000058	0.011	<0.000058
Methyl Acetate	<0.00169	<0.00142	<0.000847	<0.00142

Gulfco Former AST Tank Farm
North and South Containment Area Sample Analytical Results

Parameter	North Containment		South Containment	
	12/14/2006	4/6/2010	12/14/2006	4/6/2010
VOCs (cont'd)				
Methyl iodide	<0.000841	<0.000243	<0.00042	<0.000243
Methylcyclohexane	<0.000378	<0.000072	<0.000189	<0.000072
Methylene chloride	0.012 J	0.00312 J	0.000765 J	<0.000327
Naphthalene	0.023	<0.000082	0.096	<0.000082
n-Butyl alcohol	<0.05	0.409	<0.025	<0.000395
n-Butylbenzene	<0.000561	<0.000037	<0.000281	<0.000037
n-Propylbenzene	<0.000609	<0.000054	<0.000305	<0.000054
o-Xylene	0.00189 J	<0.000027	0.00476 J	<0.000027
sec-Butylbenzene	<0.000598	<0.000027	<0.000299	<0.000027
Styrene	<0.000304	<0.000051	<0.000152	<0.000051
tert-Butyl methyl ether (MTBE)	<0.000358	<0.000052	<0.000179	<0.000052
tert-Butylbenzene	<0.000573	<0.000078	<0.000287	<0.000078
Tetrachloroethene	0.00627 J	<0.000121	<0.000768	<0.000121
Toluene	0.00791 J	<0.000059	0.033	<0.000059
trans-1,2-Dichloroethene	<0.000747	<0.000107	<0.000374	<0.000107
trans-1,3-Dichloropropene	<0.000359	<0.000054	<0.00018	<0.000054
trans-1,4-Dichloro-2-butene	<0.00143	<0.000329	<0.000717	<0.000329
Trichloroethene	0.018	<0.000062	<0.000702	<0.000062
Trichlorofluoromethane	<0.00051	<0.000123	<0.000255	<0.000123
Trichlorotrifluoroethane	<0.00072	<0.000127	<0.00036	<0.000127
Vinyl acetate	<0.000756	<0.000202	<0.000378	<0.000202
Vinyl chloride	<0.000765	<0.000093	<0.000383	<0.000093
Xylene (total)	0.00481 J	<0.00005	0.016	<0.00005
SVOCs				
1,2Diphenylhydrazine/Azobenzen	<0.000204	NA	<0.000204	NA
2,4,5-Trichlorophenol	<0.000406	NA	<0.000406	NA
2,4,6-Trichlorophenol	<0.00042	NA	<0.00042	NA
2,4-Dichlorophenol	<0.000387	NA	<0.000387	NA
2,4-Dimethylphenol	<0.00131	NA	<0.00131	NA
2,4-Dinitrophenol	<0.00112	NA	<0.00112	NA
2,4-Dinitrotoluene	<0.000464	NA	<0.000464	NA
2,6-Dinitrotoluene	<0.00041	NA	<0.00041	NA
2-Chloronaphthalene	<0.000343	NA	<0.000343	NA
2-Chlorophenol	<0.000344	NA	<0.000344	NA
2-Methylnaphthalene	<0.000102	NA	<0.000102	NA
2-Nitroaniline	<0.000267	NA	<0.000267	NA
2-Nitrophenol	<0.000522	NA	<0.000522	NA
3,3'-Dichlorobenzidine	<0.00208	NA	<0.00208	NA
3-Nitroaniline	<0.0004	NA	<0.0004	NA
4,6-Dinitro-2-methylphenol	<0.000284	NA	<0.000284	NA
4-Bromophenyl phenyl ether	<0.000366	NA	<0.000366	NA
4-Chloro-3-methylphenol	<0.000408	NA	<0.000408	NA
4-Chloroaniline	<0.000786	NA	<0.000786	NA
4-Chlorophenyl phenyl ether	<0.000346	NA	<0.000346	NA
4-Nitroaniline	<0.000564	NA	<0.000564	NA
4-Nitrophenol	<0.00201	NA	<0.00201	NA
Acenaphthene	<0.000135	NA	<0.000135	NA
Acenaphthylene	<0.0000884	NA	<0.0000884	NA
Acetophenone	0.00633 J	NA	<0.000371	NA
Aniline	<0.000556	NA	<0.000556	NA
Anthracene	<0.000102	NA	<0.000102	NA
Atrazine (Aatrex)	<0.00205	NA	<0.00205	NA

Gulfco Former AST Tank Farm
North and South Containment Area Sample Analytical Results

Parameter	North Containment		South Containment	
	12/14/2006	4/6/2010	12/14/2006	4/6/2010
SVOCs (cont'd)				
Benzaldehyde	<0.00121	NA	<0.00121	NA
Benzidine	<0.00718	NA	<0.00718	NA
Benzo(a)anthracene	<0.0000796	NA	<0.0000796	NA
Benzo(a)pyrene	<0.00015	NA	<0.00015	NA
Benzo(b)fluoranthene	<0.000165	NA	<0.000165	NA
Benzo(g,h,i)perylene	<0.000141	NA	<0.000141	NA
Benzo(k)fluoranthene	<0.0000662	NA	<0.0000662	NA
Benzoic acid	<0.001	NA	<0.001	NA
Benzyl alcohol	<0.000442	NA	<0.000442	NA
Biphenyl	<0.000341	NA	<0.000341	NA
Bis(2-Chloroethoxy)methane	<0.000241	NA	<0.000241	NA
Bis(2-Chloroethyl)ether	<0.00047	NA	<0.00047	NA
Bis(2-Chloroisopropyl)ether	<0.000528	NA	<0.000528	NA
Bis(2-Ethylhexyl)phthalate	<0.00191	NA	<0.00191	NA
Butyl benzyl phthalate	<0.000356	NA	<0.000356	NA
Caprolactam	<0.00258	NA	<0.00258	NA
Carbazole	<0.000293	NA	<0.000293	NA
Chrysene	<0.0000563	NA	<0.0000563	NA
Dibenz(a,h)anthracene	<0.000257	NA	<0.000257	NA
Dibenzofuran	<0.00032	NA	<0.00032	NA
Diethyl phthalate	<0.000257	NA	<0.000257	NA
Dimethyl phthalate	<0.000206	NA	<0.000206	NA
Di-n-butyl phthalate	<0.000944	NA	<0.000944	NA
Di-n-octyl phthalate	<0.000889	NA	<0.000889	NA
Fluoranthene	<0.000155	NA	<0.000155	NA
Fluorene	<0.00011	NA	<0.00011	NA
Hexachlorobenzene	<0.000256	NA	<0.000256	NA
Hexachlorocyclopentadiene	<0.000597	NA	<0.000597	NA
Hexachloroethane	<0.000842	NA	<0.000842	NA
Indeno(1,2,3-cd)pyrene	<0.000158	NA	<0.000158	NA
Isophorone	<0.00024	NA	<0.00024	NA
m,p-Cresol	<0.000295	NA	<0.000295	NA
Nitrobenzene	<0.000362	NA	<0.000362	NA
n-Nitrosodimethylamine	<0.00101	NA	<0.00101	NA
n-Nitrosodi-n-propylamine	<0.000313	NA	<0.000313	NA
n-Nitrosodiphenylamine	<0.00051	NA	<0.00051	NA
o-Cresol	<0.000327	NA	<0.000327	NA
Pentachlorophenol	<0.00106	NA	<0.00106	NA
Phenanthrene	<0.000137	NA	<0.000137	NA
Phenol	<0.000325	NA	<0.000325	NA
Pyrene	<0.0000899	NA	<0.0000899	NA
Pyridine	<0.000349	NA	<0.000349	NA
Metals				
Arsenic	0.012	<0.003	0.024	<0.003
Barium	1.17	0.24	0.49	0.26
Cadmium	<0.00019	<0.00016	<0.00019	<0.00016
Calcium	45.4	140	7.36	72.2
Chromium	0.0028 B	0.0018 J	0.0031 B	0.0031 J
Hardness	192	606	34.9	573
Iron	0.6	0.54	1.52	0.8
Lead	<0.0013	<0.0015	0.0044 B	0.0019 J
Manganese	0.034	0.058	0.043	0.071

Gulfco Former AST Tank Farm
North and South Containment Area Sample Analytical Results

Parameter	North Containment		South Containment	
	12/14/2006	4/6/2010	12/14/2006	4/6/2010
Metals (cont'd)				
Mercury	<0.00004	<0.00005	<0.00004	<0.00005
Selenium	0.0049 B	<0.0037	<0.0046	<0.0037
Silver	<0.0006	<0.00058	<0.0006	<0.00058
TPH (TX 1005)				
>C12-C28	2.5 J	<0.131	<0.815	<0.131
>C28-C35	<0.824	<0.131	<0.815	<0.131
C6-C12	<0.249	<0.113	<0.247	<0.113
Total TPH (C6-C35)	2.5 J	<0.113	<1.88	<0.113
Pesticides/Herbicides				
4,4'-DDD	0.00095	<0.0000037	0.00021	<0.0000037
4,4'-DDE	<0.00000556	<0.0000041	0.00004 J	<0.0000041
4,4'-DDT	0.00026	<0.0000039	0.00027	<0.0000039
Aldrin	<0.00000261	<0.0000022	0.00000336 J	<0.0000022
alpha-BHC	0.0000466	<0.0000025	0.0000113 J	<0.0000025
alpha-Chlordane	<0.00000274	<0.0000056	<0.00000274	<0.0000056
beta-BHC	<0.00000424	<0.0000065	<0.00000424	<0.0000065
delta-BHC	<0.00000232	<0.0000038	<0.00000232	<0.0000038
Dieldrin	0.0000427 J	<0.0000037	<0.00000471	<0.0000037
Endosulfan I	0.00022	<0.0000041	0.0000508	<0.0000041
Endosulfan II	0.00019	<0.0000023	0.000043 J	<0.0000023
Endosulfan sulfate	0.00095	<0.0000055	0.0000878	<0.0000055
Endrin	<0.00000832	<0.0000034	<0.00000832	<0.0000034
Endrin aldehyde	0.00037	<0.0000048	<0.00000484	<0.0000048
Endrin ketone	0.000053	<0.0000044	<0.00000426	<0.0000044
gamma-BHC (Lindane)	<0.00000255	<0.0000028	<0.00000255	<0.0000028
gamma-Chlordane	<0.00000542	<0.0000038	<0.00000542	<0.0000038
Heptachlor	<0.00000439	<0.0000023	<0.00000439	<0.0000023
Heptachlor epoxide	<0.00000732	<0.0000052	0.0000329	<0.0000052
Methoxychlor	<0.00000214	<0.0000087	<0.00000214	<0.0000087
Toxaphene	<0.000275	<0.00055	<0.000275	<0.00055
2,4,5-T	<0.00015	NA	<0.00015	NA
2,4,5-TP (Silvex)	<0.00013	NA	<0.00013	NA
2,4'-D	<0.00027	NA	<0.00027	NA
PCBs				
Aroclor-1016	<0.000125	NA	<0.000125	NA
Aroclor-1221	<0.000115	NA	<0.000115	NA
Aroclor-1232	<0.0001	NA	<0.0001	NA
Aroclor-1242	<0.000125	NA	<0.000125	NA
Aroclor-1248	<0.000065	NA	<0.000065	NA
Aroclor-1254	<0.000105	NA	<0.000105	NA
Aroclor-1260	<0.00012	NA	<0.00012	NA
TDS/TSS				
Total Dissolved Solids(TDS)	976	3260	973	4750
Total Suspended Solids	15	7	11	13

Notes:
All values in mg/L
NA = Not Analyzed
J = Analyte confirmed present, but the reported value is an estimated quantity.
B = Analyte confirmed present, but the reported value is an estimated quantity - metals.